

**IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE**

Patent Application

Inventor(s):	Ronald Van Haalen et al.	Serial No.:	10/621,060
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Examiner:	Moore, Ian N.	Group Art Unit:	2416
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Title: Communication Network Comprising At Least A Source And A Switch
for Receiving and Forwarding Data Packets Originated By The Source

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APPEAL BRIEF

Appellants submit this Appeal Brief to the Board of Patent Appeals and Interferences on appeal from the decision of the Examiner of Group Art Unit 2416 mailed May 20, 2009 finally rejecting claims 1-16.

In the event that an extension of time is required for this appeal brief to be considered timely, and a petition therefor does not otherwise accompany this appeal brief, any necessary extension of time is hereby petitioned for.

Appellants believe the only fee due is the **\$540** Appeal Brief fee which is being charged to counsel's credit card. In the event Appellants are incorrect, the Commissioner is authorized to charge any other fees to Deposit Account No. 50-4802/**ALU/Van Haalen**.

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REAL PARTY IN INTEREST

The real party in interest is ALCATEL-LUCENT. The assignee of record is LUCENT TECHNOLOGIES INC, which merged with ALCATEL to form ALCATEL-LUCENT.

RELATED APPEALS AND INTERFERENCES

Appellants assert that no appeals or interferences are known to Appellants, Appellants' legal representative, or assignee which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

STATUS OF CLAIMS

A. TOTAL NUMBER OF CLAIMS IN APPLICATION

Claims in the application are: 1-16.

B. STATUS OF ALL THE CLAIMS IN APPLICATION

Claims cancelled: none.

Claims withdrawn from consideration but not cancelled: none.

Claims pending: 1-16.

Claims allowed: none

Claims rejected: 1-16.

Claims objected to: none.

C. CLAIMS ON APPEAL

The claims on appeal are: 1-16.

STATUS OF AMENDMENTS

On May 29, 2007, the Examiner issued the First Office Action on the merits (FOAM). Subsequently, an amendment was filed on August 9, 2007. Claims 1-8, and 9-10 were amended to obviate the Examiner's rejections and to further distinguish the invention from the references of record. Claims 11-16 were newly added.

The Examiner issued a Final Office Action on October 9, 2007. The amendments were largely disregarded; the arguments were refuted as moot in view of the new grounds of rejection and the same rejection was reasserted. In response to that Office Action, on October 30, 2007 a Request for Continued Examination (RCE) was filed. Arguments distinguishing the invention from the references of record were presented.

In response to the Appellant's RCE, a non-Final Rejection was issued on December 26, 2007. Subsequently, a response was filed on March 20, 2008. The Examiner issued a Final Office Action on October 27, 2008. Responsive to that rejection, another RCE was filed on December 2, 2008. The Examiner issued a third non-Final Office Action on February 11, 2009. A response to the non-Final Office action was filed on March 27, 2009. A Final Action was issued on May 20, 2009. A Notice of Appeal was filed on June 11, 2009.

For the convenience of the Board of Patent Appeals and Interferences, Appellants' independent claims 1, 6 and 11 are presented below with citations to various figures and appropriate citations to at least one portion of the specification for elements of the appealed claims.

SUMMARY OF CLAIMED SUBJECT MATTER

A. CLAIM 1 – INDEPENDENT

The claimed embodiments provide a communication network with a switch, which is arranged to prevent re-ordering of data packets.

The switch is arranged to discard for a period of time any data packet originating from the source at the first one of the at least two incoming ports upon receiving a data packet originating from the source at the second one of the at least two incoming ports after receiving a data packet originating from the source at the first one of the at least two incoming ports. This has the advantage that upon receiving a data packet originating from the source at the second one of the at least two incoming ports after receiving a data packet originating from the source at the first one of the at least two incoming ports another data packet from the source can for a period of time not be received at the first one of the at least two incoming ports. This other data packet originating from the source may have been sent from the source before the data packet received at the second one of the at least two incoming ports was sent from the source. By discarding this other data packet, re-ordering of data packets is prevented.

Claim 1 is directed to a communication network. Specifically, the network comprises at least two mutually different routing paths for commonly sourcing data packets; and a switch having a plurality of inputs respectively coupled to the routing paths for receiving the data packets, and an output for forwarding the data packets, the switch configured to discard or accept data packets depending on the source from which the data packets originate; wherein in response to a data packet being received out of order at a first of the plurality input ports, data packets received at the first input port are discarded for a period of time while data packets received at the other input ports are processed, such that the data packets forwarded on the output are in correct packet order and further allow less of a number of bits to be forwarded than were transmitted.

Support for the elements of claim 1 can be found at least from the following sections of Appellants' original specification: FIGs. 1-11; page 3, 5:19; pp. 5-6

B. CLAIM 6 – INDEPENDENT

Claim 6 is directed to a switch for use in a communication network, the switch receiving data packets having a packet order, determining whether the received data packets are in correct order, and forwarding the received data packets in correct packet order. Specifically, the switch comprises at least two incoming ports for receiving data packets via respective routing paths and an output port for forwarding data packets, said data packets are discarded or accepted depending on the source from which the data packets originate; wherein in response to a commonly sourced data packet being received out of order at a first of the plurality input ports, commonly sourced data packets received at the first input port are discarded for a period of time while commonly sourced data packets received at the other input ports are processed to thereby allow less of a number of bits to be forwarded than were transmitted.

Support for the elements of claim 6 can be found at least from the following sections of Appellants' original specification: FIGs. 1-11; page 3:19-page 4:8.

C. CLAIM 11 – INDEPENDENT

Claim 11 is directed to a switch configured for receiving data packets having a packet order, determining whether the received data packets are in correct order, and forwarding the received data packets in correct packet order. Specifically, the switch comprises a plurality of input ports for successively receiving said data packets from a respective plurality of routing paths; and an output port for forwarding data packets, said data packets are discarded or accepted depending on the source from which the data packets originate; wherein in response to a data packet being received out of order at a first of any one of the plurality input ports, data packets are discarded for a period of time at the first input port while being allowed at the other input ports thereby allowing less of a number of bits to be forwarded than were transmitted.

Support for the elements of claim 11 can be found at least from the following sections of Appellants' original specification: FIGs. 1-11; page 4:8-15.

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

A. GROUND OF REJECTION 1 (Claims 1, 6 and 11).

Claims 1, 6 and 11 are rejected under 35 U.S.C. §102(e) as being anticipated by Boduch U.S. Patent No. 6,667,954 B1 (Boduch).

B. GROUND OF REJECTION 2 (Claims 1-4, 6-9 and 11-16).

Claims 1-4, 6-9 and 11-16 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,809,011 (Almay) in view of U.S. Patent No. 6,028,861 (Soirinsuo).

C. GROUND OF REJECTION 3 (Claims 5 and 10).

Claims 5 and 10 are rejected under 35 U.S.C. §103(a) as being unpatentable over Almay in view of Soirinsuo as applied to claims 1 and 6 above, and further in view of U.S. Patent No. 6,535,489 (Merchant).

ARGUMENTS

A. GROUND OF REJECTION 1 (Claims 1, 6 and 11).

A.1. Claim 1.

Appellant initially shows error in the rejection of claim 1 in that the Examiner has mischaracterized the teachings of the cited Boduch reference. Claim 1 recites in part: “the switch configured to discard or accept data packets depending on the source from which the data packets originate.” In rejecting this aspect of claim 1, the Examiner cites Boduch. Appellant urges to the contrary.

First, to anticipate a claim, the reference must teach every element of the claim. See MPEP §2131. Furthermore, “A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. V. Union Oil Co. Of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The anticipation regime announced by the court requires “express” or “inherent” disclosures in a single prior art as the necessary test to reject a claim during prosecution of an application. Boduch fails to disclose exactly what is claimed.

The Boduch reference fails to disclose each and every element of the claimed invention, as recited in amended independent claim 1. Specifically, the Boduch reference fails to teach or suggest at least the claim element “the switch configured to discard or accept data packets depending on the source from which the data packets originate,” as recited in amended independent claim 1.

The Examiner cites Figures 1, 2; col. 5, lines 9-30, 50-65; col. 6, lines 30-60; col. 8, lines 40-50 for the proposition that Boduch teaches the claimed limitation. One of the citations is reproduced here for illustrative purposes.

As noted above, each cell stream has a source identification number, identifying the source of a given cell stream. The source identification number is one of the fields extracted by the cell overhead extractor/monitor 201.

The source ID translator 202 translates the source identification number (extracted by the cell overhead extractor/monitor 201) from the particular switch network copy into multiple signals for that switch network copy. The source ID translator 202 outputs a corresponding number of control

signals per switch network copy. For example, for a synchronous transport signal, level 12 (STS-12), the source ID translator 202 outputs 12 control signals. These control signals indicate into which STS-1 the current cell is to be inserted.

The source ID translator 202 may also capture cell overhead information associated with any misrouted cell. A misrouted cell is a cell containing a source identification number which does not match one of the expected source identification numbers with which it is compared. For STS's, the source ID translator 202 performs this comparison by comparing the source identification number of each cell that arrives with as many as 24 expected source identification numbers. col 5:9-31.

As can be seen, this passage does not teach “expressly” or “inherently” discard or accept data packets depending on the source from which the data packets originate. The Boduch reference is directed toward “selecting the better of two or more copies of a cell in a cell-oriented redundant switching system connected to an external communications network” (see Boduch, Abstract). Selecting “the better of two or more copies of cells” is not equivalent to the claimed “discarding,” wherein cells are irrevocably prevented from being forwarded, as exemplified among other places in the Appellants’ Fig. 10, wherein cells 1, 3 and 4 are forwarded, and cell 2 is “discarded” with Destination B not receiving a “copy” of a cell; thereby allowing fewer (i.e., less of a number of bits) bits to be forwarded than were transmitted.

In contrast, claim 1 recites in part “the switch configured to discard or accept data packets depending on the source from which the data packets originate,” which is not taught by Boduch expressly or impliedly.

Moreover, Boduch discloses “if any cells required to construct the outgoing datastream are missing...ASIC 110 inserts idle filler bytes, consisting, for example, of alternating ‘1’ and ‘0’s to compensate for the missing data (col. 4, lines 33-36). Hence, Boduch does not even allow fewer bits to be forwarded than were transmitted, in contrast to the claimed “discarding.”

In addition to Boduch failing to teach “discarding,” the reference also fails to teach or suggest the claimed “data packets forwarded on the output are in the correct packet order.” The Office Action suggests this claim element is taught by Boduch col. 10, line 32 to col. 11, line 6 - “packets/cells transmitted from the cell selector 206 at the

output/transmit interface of ASIC 100 is in sequential order” (Examiner’s paraphrasing). The applicants respectfully disagree.

By “sequential order,” Boduch is not referring to packets being in the same order as they were originally transmitted. Rather, Boduch is referring to “each cell has a multi-bit sequence number which is attached at ingress port module 104 and which is **identical for both copies of the same cell**, and increasing for each subsequent cell **entering** the best cell copy selection ASIC 110” (col. 4, lines 18-22, emphasis added). The sequence number is **arbitrarily** assigned to all cells at the receiving end (ASIC 110) of the system, based on the incremental order in which they arrive, **not** with respect to the order in which they were transmitted. The cells could still arrive out of order at ASIC 110, be assigned a sequence number, and be forwarded out of order. Hence, Boduch does not teach or suggest “in response to a data packet being received out of order at a first of the plurality input ports, data packets received at the first input port are **discarded** for a period of time while data packets received at the other input ports are processed, such that the data packets forwarded on the output **are in correct packet order**,” as recited in independent claim 1, and as such fails to disclose each and every element of the claimed invention, as arranged in Applicants' independent claim 1.

Appellants have thus shown that there are missing claimed features not taught/suggested by the cited reference – including “**the switch configured to discard or accept data packets depending on the source from which the data packets originate**” – and thus, independent claim 1 has been erroneously rejected under 35 U.S.C. §102(e).

A.2. Claims 6 and 11.

Appellant initially shows error in the rejection of claims 6 and 11 in that in the Office Action the Examiner lumped claims 1, 6 and 11 together and only addressed the limitations of claim 1; therefore the limitations of claims 6 and 11 that are different from claim 1 have not been addressed. For example, claim 1 recites: “a switch having a plurality of inputs respectively coupled to the routing paths for receiving the data packets, and an output for forwarding the data packets, the switch configured to discard or accept data packets depending on the source from which the data packets originate,” whereas claims 6 and 11 do not. A plurality of claims should never be grouped together in a

common rejection, unless that rejection is equally applicable to all the claims in the group. See MPEP §707.07(d). In this case, the rejection is not equally applicable to all the claims in the group because claim 6 recites “at least two incoming ports for receiving data packets via respective routing paths and an output port for forwarding data packets” limitations whereas claim 1 does not.

Claims 6 and 11 further recite: “said data packets are discarded or accepted depending on the source from which the data packets originate.” As articulated above with respect to claim 1, Boduch does not disclose this claimed feature. There are missing claimed features not taught/suggested by the cited reference. Boduch does not teach or suggest each and every element of claims 6 and 11; Boduch therefore, does not anticipate claims 6 and 11.

It is thus further shown that claims 6 and 11 have been erroneously rejected under 35 U.S.C. §102(e), as there are claimed features not taught or suggested by any of the cited references.

B. GROUND OF REJECTION 2 (Claims 1-4, 6-9 and 11-16).

B.1. Claim 1.

Appellant initially shows error in the rejection of claim 1 in that the Examiner failed to establish a *prima facie* showing of obviousness because the combination of Almay and Soirinsuo fails to teach or suggest all the claim elements. Therefore, the Examiner failed to establish a factual basis to support the legal conclusion of obviousness. *See In re Fine*, 837 F.2d 1071, 1073 (Fed. Cir. 1988).

According to MPEP §2141-2143, the key to supporting any rejection under 35 U.S.C. §103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. Rejections on obviousness cannot be sustained by mere conclusory statements; instead there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.

The invention is directed toward receiving packets simultaneously from at least two different paths, and discarding packets at their port of arrival if they are detected to be out of order. Specifically, the invention claims “in response to a commonly sourced data packet being received out of order at a first of the plurality of input ports, commonly

sourced data packets received at the first input port are discarded for a period of time while commonly sourced data packets received at the other input port are processed said data packets are discarded or accepted depending on the source from which the data packets originate.” To the contrary, Soirinsuo never allows data at any more than one input port to be considered, or “processed,” at any given time. Soirinsuo instead teaches an *all-or-nothing* switching process, wherein *all* data transmissions are permitted to be forwarded (with no data being “discarded”) from a particular port, while *no* data is permitted to be forwarded from the other(s). Soirinsuo succinctly explains this with “for an egress switch-over, the ATM switch will send out all cells coming from the ‘new’ connection, and discard all cells received on the ‘old’ channel” (col. 10, lines 25-27, emphasis added). The Soirinsuo switchover is completely discrete, where after no cells arriving at any input port that has not been explicitly switched to are even considered, be they out-of-order or not.

Even though Soirinsuo mentions the word “discard,” the Appellants respectfully maintain that the art distinctly teaches away from “discard,” as specifically claimed. Soirinsuo does not mention any provisions for actually *detecting* if packets or cells are being received out of order or not, so for one, it is not even possible for Soirinsuo to specifically respond “to a commonly sourced data packet being received out of order” by any means. Soirinsuo merely entails waiting until a “frame completed” state is received before performing a switchover (Figure 10), and then performing the switchover *immediately* after that occurs. Soirinsuo Figure 9, and column 9, lines 51-54 explains “the integrity of AAL-5 packets 901 can be maintained by timing the switch-over so that switchover 902 happens right after a cell 904 having a last cell indication set, e.g., the AUU or user signaling bit.” As is shown, all processes in Soirinsuo are clearly directed toward *completely* receiving all cells on a singular elected path, and not *discarding* any of them once cell reception has begun. To do so would be contrary to the entire premise of Soirinsuo. Thus, in addition to not teaching “discard” as represented by the claims, the Appellants respectfully submit that Soirinsuo in fact teaches away from the claim element in the manner it is presented in the claims as well.

Further, the Examiner latches to one word “discard” and ignores the remainder of the limitation in its entirety, to wit, “said data packets are discarded or accepted

depending on the source from which the data packets originate.” With respect to the instant claims, the context and proper interpretation of the initial claim term is simply lost using this analysis technique. Taken to an extreme, a claim term may be broken into individual letters, which letters are likely present in any reference. The presence of the individual letters in a reference does not mean that the initial claim term has been disclosed or suggested.

Therefore, Almay in view of Soirinsuo does not satisfy the requirements for a 35 U.S.C. §103(a) rejection according to MPEP §2143.

B.2. Claims 6 and 11.

As articulated above with respect to claim 1, there are missing claimed features not taught/suggested by the cited references – including “said data packets are discarded or accepted depending on the source from which the data packets originate” – and thus, independent claims 6 and 11 have been erroneously rejected under 35 U.S.C. §103(a). The Examiner failed to establish a *prima facie* showing of obviousness.

B.3. Claims 2-4, 7-9 and 12-16.

Each ground of rejection applies only to dependent claims, and each is predicated on the validity of the rejection under 35 U.S.C. §103 given Almay in view of Soirinsuo as applied to claims 1, 6 and 11 above. Since the rejection under 35 U.S.C. §103 given Almay in view of Soirinsuo has been overcome, these grounds of rejection cannot be maintained.

Therefore, Appellants’ claims 2-4, 7-9 and 12-16 are patentable under 35 U.S.C. §103(a) over Almay in view of Soirinsuo as applied to claims 1, 6 and 11 above.

C.1. Claims 5 and 10.

Each ground of rejection applies only to dependent claims, and each is predicated on the validity of the rejection under 35 U.S.C. §103 given Almay in view of Soirinsuo as applied to claims 1, 6 and 11 above, and further in view of Merchant. Since the rejection under 35 U.S.C. §103 given Almay in view of Soirinsuo has been overcome, as described hereinabove, and there is no argument put forth by the Office Action that Merchant

supplies that which is missing from Almay in view of Soirinsuo to render the independent claims obvious, these grounds of rejection cannot be maintained.

Therefore, Appellants' claims 5 and 10 are patentable under 35 U.S.C. §103(a) over Almay in view of Soirinsuo as applied to claims 1, 6 and 11 above, and further in view of Merchant.

CONCLUSION

Thus, Appellants submit that all of the claims presently in the application are allowable.

For the reasons advanced above, Appellants respectfully urge that the rejection of claims 1-16 is improper. Reversal of the rejection of the Final Office Action is respectfully requested.

Respectfully submitted,

Dated: _____

6/30/09



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CLAIMS APPENDIX

1. (Previously Presented) A communication network, comprising:
at least two mutually different routing paths for commonly sourcing data packets;
and

a switch having a plurality of inputs respectively coupled to the routing paths for receiving the data packets, and an output for forwarding the data packets, the switch configured to discard or accept data packets depending on the source from which the data packets originate;

wherein in response to a data packet being received out of order at a first of the plurality input ports, data packets received at the first input port are discarded for a period of time while data packets received at the other input ports are processed, such that the data packets forwarded on the output are in correct packet order and further allow less of a number of bits to be forwarded than were transmitted.

2. (Previously Presented) The communication network according to claim 1, wherein in response to a commonly sourced data packet being received out of order at a second of the plurality input ports, commonly sourced data packets received at all of the input ports are discarded for a period of time.

3. (Previously Presented) The communication network according to claim 1, wherein the period of time lasts until the switch is informed that re-ordering of the commonly sourced data packets is no longer possible.

4. (Previously Presented) The communication network according to claim 1, wherein the period of time has a predetermined length of time.

5. (Previously Presented) The communication network according to claim 1, wherein the communication network is used by an Ethernet Network.

6. (Previously Presented) A switch for use in a communication network, the switch receiving data packets having a packet order, determining whether the received data packets are in correct order, and forwarding the received data packets in correct packet order, the switch comprising:

at least two incoming ports for receiving data packets via respective routing paths and an output port for forwarding data packets, said data packets are discarded or accepted depending on the source from which the data packets originate;

wherein in response to a commonly sourced data packet being received out of order at a first of the plurality input ports, commonly sourced data packets received at the first input port are discarded for a period of time while commonly sourced data packets received at the other input ports are processed to thereby allow less of a number of bits to be forwarded than were transmitted.

7. (Previously Presented) The switch according to claim 6, wherein:

in response to a commonly sourced data packet being received out of order at a second of the plurality input ports, commonly sourced data packets received at all of the input ports are discarded for a period of time.

8. (Previously Presented) The switch according to claim 6, wherein the period of time lasts until the switch is informed that re-ordering of the commonly sourced data packets is no longer possible.

9. (Previously Presented) The switch according to claim 6, wherein the period of time has a predetermined length of time.

10. (Previously Presented) The switch according to claim 6, wherein the communication network is used by an Ethernet Network.

11. (Previously Presented) A switch configured for receiving data packets having a packet order, determining whether the received data packets are in correct order, and forwarding the received data packets in correct packet order, comprising:

a plurality of input ports for successively receiving said data packets from a respective plurality of routing paths; and

an output port for forwarding data packets, said data packets are discarded or accepted depending on the source from which the data packets originate;

wherein in response to a data packet being received out of order at a first of any one of the plurality input ports, data packets are discarded for a period of time at the first input port while being allowed at the other input ports thereby allowing less of a number of bits to be forwarded than were transmitted.

12. (Previously Presented) The switch of claim 11, wherein the data packets are forwarded without the discarded data packets received at the first of the input ports.

13. (Previously Presented) The switch of claim 11, wherein the period of time is a predetermined period of time.

14. (Previously Presented) The switch of claim 11, wherein the period of time is terminated in response to a determination that a data packet condition is no longer possible.

15. (Previously Presented) The switch of claim 13, further configured to discard data packets for the period of time at all input ports apart from a single input where data packets are determined to be arriving in the correct order.

16. (Previously Presented) The switch of claim 15, wherein only data packets from the single input where data packets are determined to be arriving in the correct order are forwarded.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.